

Introduction to Conversation Analysis with examples from audiology

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In this brief presentation of Conversation Analysis ("CA"), we take up some of the communication problems associated with hearing loss and link them to conversation analytic concepts. We explain how attempts to control the conversation, embarrassment and miscommunication can be analyzed as interactional achievements in the areas of turn-taking, repair and nonverbal actions. The chapter also explains which kinds of data are used in CA, how the participants' perspective is analyzed and some of the theoretical assumptions underlying the analysis. Examples of transcribed interactional sequences with hearing loss illustrate how turn-taking, eye gaze and trouble in hearing/understanding ("repair") are sensitive to this communication disorder.

I. Introduction

In the fields of audiology and hearing rehabilitation, studies on social interaction of adults with acquired hearing loss are scarce compared to the large body of research on testing and technology (but see Kaul 2003; Skelt 2006; 2007; 2010). Data used to gain insights into communication behavior consist of simulations, of real-life communication and of post-hoc reports collected through interviews, surveys, focus groups and questionnaires. These studies have found a number of interactional characteristics in hearing loss communication, yet little is known about the actual emergence and handling of these phenomena in naturally occurring interaction.

In audiology, the motivation to study communication with hearing loss lies in developing and improving intervention and rehabilitation (e.g., Caissie et al. 2005). Therefore, it is necessary to understand the problems in real-life situations. In this edited volume we propose to study interaction with hearing loss as directly and as closely as possible where it happens, in naturally occurring interaction taped on video, and by analyzing the participants' perspectives.

After a short presentation of assumptions concerning data, analysis and theoretical foundations of CA, we introduce the following basic concepts. The turn-taking mechanism is important in order to understand how persons with hearing loss try to avoid being in the position of the hearer by using longer turns and by interruptions to gain the floor. The organization of repair as the mechanism of dealing with trouble in speaking, hearing and understanding is crucial to how hearing problems are covered up or create miscommunication. Especially in hearing loss communication, a multimodal analysis is needed which includes nonverbal behavior, aspects of spatial arrangements as well as the handling of tools and technologies because problems due to hearing loss may be compensated, for example, by eye gaze, body constellation and the avoidance of rooms with echo effect and background noise.

Research on communication with hearing loss and hearing aids is largely based on experiments, simulations and subjective reports.

For realistic innovation and rehabilitation, research on authentic interaction is needed.

We exemplify how this can be achieved.

This chapter introduces

- data, analysis and theory
- analysis of basic mechanisms and organization principles of interaction
 - turn-taking
 - repair
 - nonverbal conduct
 - contextual features

2. Conversation Analysis and related fields

One of the experiences in interdisciplinary projects has been that there is a tendency to view the ‘other’ discipline(s) as somewhat monolithic. In the scientific landscape, CA is not the only discipline working with naturally occurring interaction. CA has grown out of sociology and focuses on social order (Sacks 1992; Jefferson 2004; Schegloff 2007). In comparison, interactional linguistics locates itself in linguistics and pursues the analysis of language structures in naturally occurring interaction (e.g., Selting/Couper-Kuhlen 2001). The object of discursive psychology is to understand psychological and cognitive states and processes in observable interactional conduct (e.g., Edwards/Potter 1992). In linguistic anthropology, social interaction is studied to describe ethnographically cultural and ethnic communities of practice (e.g., Duranti 2004). The boundaries between CA and the above-mentioned disciplines are somewhat fluent, whereas there are clearer boundaries to discourse analysis, speech act theory, and sociolinguistics. Some, but not all researchers will agree that “pragmatics”, for example as laid out in Levinson (1983), can serve as an umbrella term.

Related fields:

- interactional linguistics
- discursive psychology
- linguistic anthropology

“Pragmatics” is often used as an umbrella term.

3. Key criteria of conversation analytic research

CA adheres to certain principles concerning the type of data used, transcription, analysis and theoretical assumptions.

Data: Most of the previous studies on communicative behavior with hearing loss are based on data of simulated interaction, and reports are elicited in interviews, questionnaires, surveys and focus groups. Research on the same phenomenon yields different results when different types of data are collected. For example, Tye-Murray/Purdy/Woodworth (1992) and Tye-Murray/Knutson/Lemke (1993) investigated whether persons with hearing loss are more likely to use requests for clarification if the conversation partner is familiar than if he or she is unfamiliar. They found different results when using a questionnaire compared to video-taped samples of simulated conversation. CA analyzes naturally occurring social interaction, i.e., interaction which is not arranged for scientific concerns. Interactions are taped on video or on audio, the latter in the case of telephone calls or sensitive data. We thus take authentic samples from real life, which allow the observation of interaction repeatedly and as closely as possible. Sometimes, the data are supplemented with ethnographic observations obtained through participant observation or interviews.

Data are video- or audio-taped naturally occurring interactions.

Transcripts: The data are transcribed using a highly detailed notation system. Talk is represented in terms of what is uttered and how it is produced. Since the focus is on the interaction and not only on the person with a hearing problem, transcripts include the detailed representation of who speaks when, including such features as pauses, overlaps, and re-starts. In addition, relevant nonverbal actions (e.g., eye gaze, gesture, body position) are noted. For communication with hearing loss, the organization of eye gaze has been shown to be sensitive to this disability. Other aspects of the situation (e.g., use of technologies, physical shape and acoustic properties of the environment) can also be taken into account. For example, the arrangement set up for an audiogram changes the conditions for social interaction (cf. Egbert to appear 2012). The combination of all facets of social conduct is called “multimodality”. For the examples in this chapter, the basic transcription conventions are explained in the appendix, and special notations are explained where they are used.

The verbal and nonverbal aspects of communication are transcribed.

Analysis: The observable conduct of participants is examined with the goal to describe order in interaction. CA systematically analyzes the participants’ perspective. The analysis focuses on what interactants signal to one another as relevant. Thus, the uptake of an action by one interactant is a dis-

The analysis focuses on how participants in interaction display to one another what is relevant to them.

play of how the prior action(s) is (are) understood. Since every action is both context-shaped and context-renewing (cf. Heritage 1984), a basic tenet of CA is to analyze data always with respect to the context they occur in. In particular, this means that the most important method is sequential analysis, i.e., the detailed analysis of how participants react to one another turn-by-turn as the interaction unfolds. This methodological credo grounds all analytical claims in the data. For example, it is not sufficient for the researcher to know that a participant in interaction is hearing impaired, it needs to be shown that hearing impairment is oriented to and in what way the participant(s) indicate its relevance.

Theory: Human interaction is shaped by social norms. Examples of social norms are the “preference for agreement and contiguity” (Sacks 1973/1987) and the preference to signal trouble in hearing or understanding immediately after the turn in which it has occurred (Schegloff et al. 1977). Still, people’s actions are not determined by social norms. Interactants orient to norms with respect to the current situation, use them flexibly and sometimes creatively. CA is interested precisely in how people manage to adapt their behavior to the changing contexts of social life in interaction. Language and nonverbal actions are the means by which people shape their social relationships. In interaction, participants show the status of their relationship in their behavior from moment to moment. CA focuses on the linguistic and interactional practices people use to organize their exchanges and to deal with tasks and problems they are faced with in interaction. Thus, CA’s outlook on hearing impairment does not only focus on how problems arise in interaction; it equally pays attention to how participants try to solve problems (i.e., their interactional coping strategies). It also takes account of how dealing with hearing problems is a collaborative enterprise, which requires contributions from all participants in the interaction.

Research design: Most of current research uses data of interaction with hearing loss where the conduct of the person with hearing loss is compared to the person with normal hearing. Initial CA research shows, however, that all participants orient to hearing loss, and therefore it would make more sense to have a comparison with a control group consisting of only normal hearing persons (Caissie et al. 1998: 48). In CA we have this opportunity because there exists a substantial body of research on interaction with normal-hearing persons in many languages and settings. As noted by Caissie et al. (1998: 48), “Studies that have compared the behaviors of adults with a hearing loss to those of their conversational partners have not accounted for the fact that the communicative behaviors of normally hearing partners may be influenced by the fact that they are interacting with someone who has hearing loss.” CA does not use experimental methods or settings and quantifies only after the phenomenon is understood qualitatively. Still, in the research process, detailed single case analysis is combined with the analysis of collections, i.e., instances of interaction where participants use the same or closely related interactional practices or deal with comparable problems. Working with collections makes sure to identify the generic structure of interactional practices and problems, probing into how they depend on contextual features and analyzing what their abstract, formal features are which are deployed in a context-sensitive fashion in the individual cases (cf. Egbert 1996; Deppermann 2008). It is only by this process of working through a collection that a robust interaction analysis yields analytical categories which are demonstrably relevant to the data. Quantification in the pursuit of identifying distributions and causal patterns may only be tried afterwards (Schegloff 1993).

Human interaction is a social activity structured by social norms, e.g.,

- preference for agreement
- preference for contiguity
- sequential position contributes to meaning

Overarching research question:

- How do people adapt their behavior to the changing contexts of social life in interaction, e.g., when a disability makes itself felt or a technology is introduced?

The focus of analysis is not on the individual with hearing loss but on interaction with hearing loss.

Prior research on hearing loss in communication has been based on experiments and simulations.

A qualitative understanding of the phenomenon is a prerequisite for quantification.

The statements in this précis will now be elaborated and exemplified in relation to some of the results of communication with hearing loss based on other methodologies.

4. Turn-taking and hearing loss

A recurring result in prior studies is that persons with hearing loss control the floor by speaking more (Caissie et al. 1993; 1994; 1998; Tye-Murray et al. 1995) and by interrupting more (Tye-Murray/Witt 1996), thus reducing time of hearing and the likelihood for problems in hearing to occur. Control of the floor is measured as “words per speaking turn” (Tye-Murray et al. 1995), or calculated by the “average number of words per turn”, resulting in the measure “mean length of turn (MLT)” (Caissie et al. 1998: 50). While “number of words in a turn” is an etic category, we will now demonstrate that CA’s categories are emic. With attention to the participants’ relevancies, a more detailed and systematic result can be achieved.

The seminal conversation analytical paper on turn-taking (Sacks et al. 1974) shows that once a participant has obtained the floor, he or she has the right to one turn-constructive unit. A turn-constructive unit (“TCU”) is the smallest unit which in itself can constitute a turn. When a speaker intends to keep the floor for longer than one TCU, special work is necessary, because co-participants monitor for the upcoming ending of a TCU as a place where turn-transition becomes relevant. In negotiating turn-transition, co-participants make use of structural features of the TCU (e.g., syntax), intonation, changes in speed, eye gaze, and body posture. A turn can thus consist of a single or of multiple TCUs.

We will now turn to a data segment from naturally occurring conversation where the phenomenon of long turns by the person with hearing loss is exemplified. We will show how instead of measuring turn length by the number of words, interactants orient to TCU boundaries in managing speaking rights. Data and analysis are taken from Skelt (ms.).

The talk is between Kay, an interactant with hearing loss, and her friend Jan with normal hearing. The transcript shows a multi-unit turn produced by Kay. Note that Jan comes in briefly at lines 003 and 007. The overlapping talk is marked with square brackets [], silences are measured in tenths of a second, and speech is represented in terms of what is said and how it is said. Underlining indicates emphasis, a colon ‘:’ lengthening, a hyphen ‘-’ a cut-off, a comma continuing intonation, and a period downward intonation.

#1a Transcript from Skelt (ms.) (“Dyad 3 327-332”; formatting adapted)

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001 Kay:  but- he didn't harm (1.0) any of
002      er- her family or[he:r],
003 Jan:      [no, ] no,
004 Kay:  a:a-and a couple of other families.
005      (0.3)
006 Kay:  [which] had been good to him an- an his w-
007 Jan:  [mmm, ]
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When we examine this segment for turn-transition relevant places, Kay’s first TCU is possibly complete in line 002 with *family*, and indeed, the co-participant comes in only a beat later with *no, no*, (line 003). Note that both words are delivered with continuing intonation (indicated by a comma in the

Do persons with hearing loss have a tendency to ‘control’ the floor to avoid being in the hearer position?

Do persons with hearing loss build longer turns to control the floor?

Kay = participant with hearing loss

transcript). Similarly, Kay's intonation on *he:r*, (line 002) signals continuation. It is however Kay in line 002 who drops out, while Jan produces her second *no*, (line 003) in the clear. Despite Jan's continuation, Kay resumes speaking and adds an increment which re completes the turn in line 004. Given that a "no," in this context projects more details, yielding the floor to Jan would indeed place Kay into a position where hearing is relevant. At the end of line 004 the turn-transition relevance space opens up again for 0.3 seconds. Then Kay and Jan start in overlap, Jan utters a *mmm*, (line 007) with continuing intonation, and Kay adds yet a further increment.

Noticeable in this segment is that both times Jan takes the floor, her contributions are delivered with continuing intonation, and both times Kay continues talking and Jan drops out. The analysis yields that Kay not only produces a long turn, but that both Kay and Jan orient to turn-transition relevance places. Kay's long turn is achieved by talking, and moreover by continuing her talk when her conversation partner accesses the floor. Thus it is not the fact that Kay produces a long turn which might be perceived as being problematic as such, because long turns also emerge when both partners orient to the production of a multi-unit turn by one speaker, as in the case of jokes or personal narratives. The long turn in this example is also an interactional achievement, but quite differently, because Jan drops out rather than continuing her talk. It takes the collaboration of the person with normal hearing to yield to the controlling actions by the person with hearing loss (Skelt ms.).

It is thus relevant to analyze turn length in terms of what the interactants do in turn-transition relevance places. When the normal hearing participant repeatedly faces competition when he or she tries to take the turn, this may lead to irritation. On the other hand, if the participant with hearing loss is telling a story, and the other interactants have aligned as story recipients, they will most likely use continuers (e.g. "mhm") and nods at TCU boundaries to signal listenership (Schegloff 1982; Stivers 2008). Thus, length of turn counted by numbers of words may be misleading as an index of problems in interaction, because the action type of the utterance and the conduct of the normal hearing partners also need to be considered.

5. Eye gaze

Let us include eye gaze in the analysis of turn-taking, analyzed in Skelt (ms.). Through shifts in eye gaze, Kay, the participant with hearing loss, signals non-listenership in exactly those places where Jan signals upcoming speakership. The same segment as above is now displayed with eye gaze shifts, using the following notation:

XXXXX gaze at the other participant
 - - - - gaze away from the other participant
 , , , , transitions between gaze constellations, either from or to partner

Kay's eye gaze is marked below her speaker's line tied to the stretch of talk where it occurs. Note that when Jan (with normal hearing) comes in, Kay (with hearing loss) starts to withdraw her gaze (marked in red color).

Kay's long turn

- is a collaborative achievement to which she herself and her communication partner contribute
- is achieved in that Kay continues talking when Jan accesses the floor, and that Jan stops talking.

The interactional conduct of all participants - with normal hearing and with hearing loss - needs to be analyzed.

The role of eye gaze in turn-taking is of particular importance in communication with hearing loss.

#1b Transcript from Skelt (ms.) ("Dyad 3 327-332"; formatting adapted)

001 Kay: but- he didn't harm (1.0) any of

002 er- her family or[he:r],
 ---,, , xxxxxxxxxxxx,,, / / / , ---

003 Jan: [no,] no,

004 Kay: a:a-and a couple of other families.

005 (0.3)

006 Kay: [which] had been good to him an- an his w-
 ----,/ / / / / / / / / / , xxxxxxxxxxxxxxxxx, / / / , xxx-----
 []
007 Jan: [mmm,]

Same segment as above with
additional notation of eye gaze

Skelt's analysis shows that in line 002, Kay shifts from gazing at Jan to looking away from her as soon as Jan takes the floor. Kay continues looking away when her turn is complete, even 0.3 seconds beyond, and during the renewed uptake of her turn. When Jan comes in simultaneously at line 007, Kay slowly shifts her gaze towards Jan, continues speaking, and Jan drops out. While gazing at the partner at the end of a TCU is a signal to hand the turn over, the withdrawal of gaze at places where turn-transition as far as only the talk is concerned would be due acts to signal that the speaker still keeps the turn (Goodwin 1980). We can thus see that Kay's gaze is finely coordinated with the way she holds the turn beyond possible transition relevance places ("TRP"), signaling Jan that she is not available as a recipient of his incipient talk.

- Eye gaze rule:
- A speaker who wants to hand over the floor gazes at the communication partner in turn-transition.
 - A speaker intending to hold the floor gazes away in turn-transition.

Kay (with hearing loss) gazes away from Jan during turn-transition. Kay drops out.

When overlap occurs, usually one speaker drops out within two to three beats (Sacks et al. 1974). We see here that Jan drops out twice while Kay continues. In the first instance Kay withdraws her gaze. This example demonstrates that when a hearing impaired speaker withholds gaze at TRPs, he or she potentially 'controls' turn exchange. "It appears that the gaze direction of the hearing impaired interactant plays a significant role in the regulation of turn exchange in at least some of these interactions." (Skelts ms.)

6. Trouble in hearing and understanding (repair initiated by 'others')

More studies are needed on sequences where trouble emerges in hearing impaired communication (Caissie et al. 1998).

When a listener in a conversation experiences trouble in hearing or understanding an ongoing turn, he or she usually signals this by a repair initiation in the next turn (Schegloff et al. 1977; Egbert 2009). Usually, the sequence ensuing the trouble-source turn consists of only two turns, the signal of trouble (repair initiation) and the fixing of the trouble (repair operation) by the trouble-source turn speaker. Frequently, a short gap emerges before repair is initiated in order to allow for a chance that the trouble-source turn speaker may amend the trouble on his/her own account.

When a listener has trouble in hearing or understanding a current turn, she can signal this in next turn with a repair initiation.

Elements of a typical sequence with trouble in hearing or understanding:

#2 On an oil rig before the morning meeting (Egbert 2004)

001 Tho: the newspapers are wet
002 (0.5)

trouble-source turn
gap

003 Rob: sorry?

004 Tho: the newspapers are wet

005 Rob: yeah, there was a:: hole in the

006 mail bag mine was soaked as well

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repair initiation
repair operation

answer to trouble-source
turn displays trouble
resolution
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Departures from this sequence structure have been shown in connection with non-native speakers, where highly complex and long repair work is necessary to re-establish intersubjectivity (Egbert et al. 2004; Egbert 2004).

What may be the differences in hearing loss communication? Initial results indicate at least four features. When a repair initiation is produced without a prior gap it may indicate a problem in hearing rather than in understanding (Svennevig 2008). The normal hearing participants use strategies not to call attention to an apparent hearing problem (Skelton 2007), long and complex repair sequences (Pajo, ch. 8, this volume), explicit accounting for the trouble with references to hearing loss (Kaul 2003), and adjustments in speech delivery, such as slower speed, clearer articulation and louder volume (Kaul 2003).

- Hearing loss can manifest in repair sequences in special ways:
 - no gap before repair initiation
 - a hearing problem is suppressed
 - complex repair sequence
 - accounting for hearing loss
 - adjustments by normal hearing partner

7. Avoidance as orientation to stigma and taboo

When in conversation among normal hearing interactants one participant notices his or her utterance was not heard or understood in the way it was meant, he or she corrects her prior utterance, for example by a turn structure like "I don't mean X, I mean Y" (Schegloff 1987; Schegloff 1992; Egbert 1997).

Exemplification of how a normal hearing participant avoids calling attention to a hearing problem.

The following example from a private conversation with hearing loss shows how the normal hearing partner avoids drawing attention to the hearing problem (from Skelt 2007). Isa has profound hearing loss and uses a cochlear implant. Isa and Dot are friends and neighbors. They are talking about whose turn it is among the neighbors to host a gathering.

#3 Avoidance (Skelt 2007)

001 Dot: I don't know whose turn it is next time,
002 Isa: mm,
003 Dot: maybe it's Laura's is [it or-]
[
004 Isa: [no I've had mine,
005 Dot: Laura would it be?
006 Isa: =Laura it might be,

Isa is profoundly hearing impaired.

Isa mishears *Laura's* for *yours*.

Instead of correcting the mishearing, Dot continues and covers the mishearing.

Dot neither corrects Isa's mishearing nor her own turn. Instead of repairing with *I didn't mean yours I meant Laura's*, she avoids a proper repair initiation. Dot does not show that Isa's response was inappropriate. Instead she re-presents the content in a new question like it was not a re-instatement of a prior one, but produced for a first time. Exposed repair is avoided since it may present a threat to perceived competence and face (cf. Skelt 2007). We can see in this example that stigma is not only managed by persons with hearing problems themselves, but that interaction partners also cooperate in saving their interlocutor's face by covering up problems. A major task for CA studies in hearing loss thus will be to analyze how both persons with hearing problems and their partners orient to the possibility of stigmatization.

Exposed repair is avoided, since it may pose a threat to perceived competence and face.

tion, how they try to evade this problem and how they might run into dilemmata, e.g., of choosing between stigmatization, pretense, loss of information, coherence and progressivity in the interaction.

9. Conclusions

This chapter has introduced basic methodological tenets of research in CA and basic structures of interaction which also crucially matter to hearing loss in interaction. The assets of a CA approach lie in

- attending to the linguistic and behavioral details of interactional conduct which are not noticed and not captured methodically by other approaches, but which may be crucial in order to understand how problems arise and how to cope with them behaviorally and linguistically;
- dealing with everyday data, thus warranting maximal ecological validity of conclusions and allowing for (perhaps surprising) findings, which may not have been imagined by prior research when, e.g., setting up an experimental design or a questionnaire.

We tried to point out how research in CA can link up with prior research on hearing loss, which has relied on other methods from the social sciences.

Studies in CA

- can flesh out 'abstract' findings which are still opaque with respect to the precise ways the phenomena come off in interaction;
- may show that research categories and findings are in need of refinement, in particular to do justice to the collaborative production of interactional structure and to the practices used by participants;
- may draw our attention to participants' practices and problems which where hitherto unnoticed.

Research on how hearing impairment manifests and is dealt with in interaction surely is an object of research in its own right. In terms of basic research, it enhances our knowledge about prerequisites and processes of the accomplishment of intersubjectivity, which may well be hidden in 'normal interactions', where certain types of problems do not routinely occur. In terms of findings which are relevant to applied sciences like audiology, rehabilitation, and User Centered Design, a CA approach to hearing impairment will provide more detailed knowledge about how everyday problems related to hearing impairment arise and how they are dealt with. Close attention to linguistic and interactional practices in detail, to their contextual, sequential embeddedness and their consequences and to the collaborative nature of dealing with hearing loss in interaction will be most valuable for finding new points of departure for patients' support and counseling, and for the design of hearing aids.

In this way stigma may be conceived as an interaction phenomenon.

Research on hearing loss using CA will contribute to:

- the phenomenology of hearing loss communication
- the analysis of problems 'in situ'

A combination of CA with existing methodologies can be fruitful.

CA on hearing loss communication contributes to knowledge about larger issues of the organization of social action:

- intersubjectivity
- multimodality
- applying CA to change interactional practices